

REMARKS/ARGUMENTS

Claims 1-29 are pending in the captioned application. Claims 28-29 are withdrawn from consideration while claims 13-27 are finally rejected. Applicants have amended claim 13. Applicants respectfully request reconsideration and allowance of the claims.

The claims are again rejected under 35 U.S.C. §103(a) as being unpatentable over Lee et al. (US 5863727) in view of Burdette et al. (J. Amer. Chem. Soc., (2001), 123, 7831-41). Applicants respectfully disagree.

Applicants first submit that claim 13, as amended, relates to a compound having a defined structure where substituents D^1 , D^2 , D^3 , R^1 to R^5 , L^1 , L^2 and L^3 are each defined, with the proviso that either R^1 is the group $-L^2-D^2$; or at least one of X^1 , X^2 , X^3 and X^4 is the group $-L^3-D^3$. Claim 13 therefore defines a tri-fluor dye.

Applicants submit that Lee relates to energy transfer fluorescent dyes, reagents incorporating the dyes and methods of use, citing the generic structure at column 4, lines 20-33 which can be linked to other dyes through the R14 position. Various classes of ET dyes are described, e.g. i) column 6, lines 4-40 and column 11; ii) column 8, lines 17-41 and column 22; iii) column 8, lines 42-59 and column 24. Examples of the first class of bi-fluor ET dyes are shown in Table 3 (column 17-19), such as 5TMR-B-CF. Examples of the second class of ET dyes are shown in Table 5 (column 24), such as 5-ROX-CF. Examples of the third class of dyes are shown in Table 6 (column 26) as having tail-to-tail linkers.

Applicants submit that while Lee describes fluorescent reagents which incorporate the ET dyes, the reagents include any molecule or material which can be attached to the bi-fluor dye and used to detect the presence of the reagent. Examples include proteins, nucleotides etc. In contrast to the present application, Lee neither describes nor claims ET tri-fluor dyes. Additionally, Lee does not describe or suggest ET dyes in which both R11 and R14 positions are utilized for coupling to another dye because, as stated in the previous response, Lee does not specifically disclose molecules in which there are two aminomethyl groups in the R11 and R14 positions. Thus, there is no motivation or teaching in Lee that would enable the skilled person to modify the dyes disclosed therein so as to arrive at the dyes as presently claimed.

Applicants submit that Burdette relates to fluorescent sensors of the type shown in structure 5 (page 7835) for specifically detecting Zn^{2+} (see previous response). Burdette does not disclose energy transfer between dyes and is therefore completely silent on tri-fluor ET dyes. Burdette therefore adds nothing more that would motivate the skilled person to invent tri-fluor ET dyes of the present invention, from simple ET complexes such as those described in Lee.

It is contended that Burdette provides neither the teaching nor the motivation to modify the teaching of Lee so as to allow the skilled person to arrive at the claimed invention. Applicants submit that the combination of Lee and Burdette does not render the present invention obvious.

In response to our previous arguments, the Examiner comments that there is nothing in Lee et al. which suggests that the compounds are not coupled to acceptor

dyes at positions R11 and R14 at the same time. Applicants respectfully disagree.

Applicants submit that there is no mention or even suggestion in Lee et al. that, in the generic structure as shown in column 4, lines 20-33, the xanthene dye class is coupled to two other dye molecules through bis-aminomethyl groups at both R11 and R14. When the Examiner comments: "In fact the generic formula of Lee et al embraces bis-aminomethyl derivatives", it is contended that the Examiner is reading something into the specification with hindsight knowledge and teaching of the present invention.

The reason for the contention that "the compounds of Lee et al are not coupled to acceptor dyes at positions R11 and R14 at the same time and therefore are not bis-aminomethyl fluorescence derivatives" is that they **are not disclosed**. It is contended that dyes having **two** aminomethyl functionalities at these specified positions, wherein the aminomethyl groups are used as linking moieties to link to other dyes (such as two acceptor dyes) is neither disclosed nor suggested in Lee et al. Therefore, as far as the amended claims are concerned, Applicants submit that there is no suggestion or motivation in Lee to prepare energy transfer dyes having more than two acceptor or donor moieties. Applicants submit that amended claims are not-obvious taking into account all the prior art cited by the Examiner.


Applicants respectfully assert that the claims are in allowable form and earnestly solicit the allowance of pending claims.

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Early and favorable consideration is respectfully requested.

Respectfully submitted,

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